

Fig. 1A

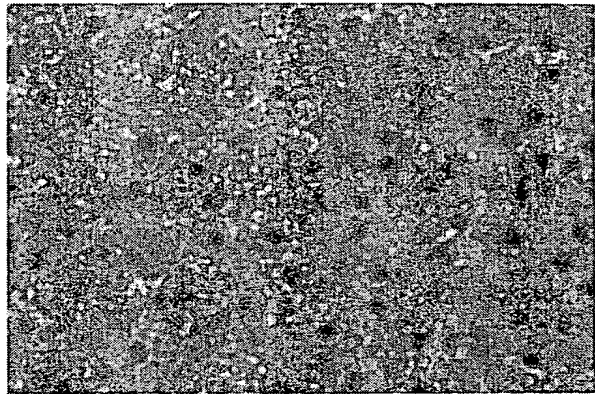


Fig. 1B

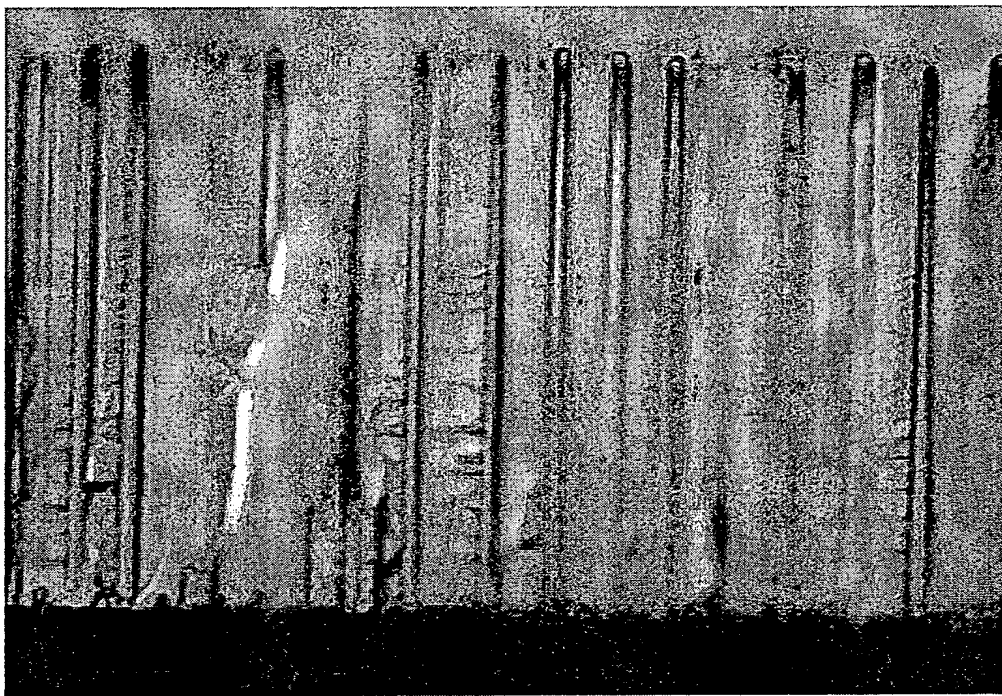


Fig. 2

09839785, 044901

A high-contrast, black and white photograph showing a close-up of a textured surface, possibly a book cover or endpaper. The image features vertical bands of dark, irregular, and somewhat jagged material against a lighter, grainy background. The texture appears rough and fibrous, with some areas showing more pronounced vertical ridges or folds. The lighting is dramatic, creating deep shadows and bright highlights that emphasize the uneven surface.

20  $\mu\text{m}$

Fig. 4

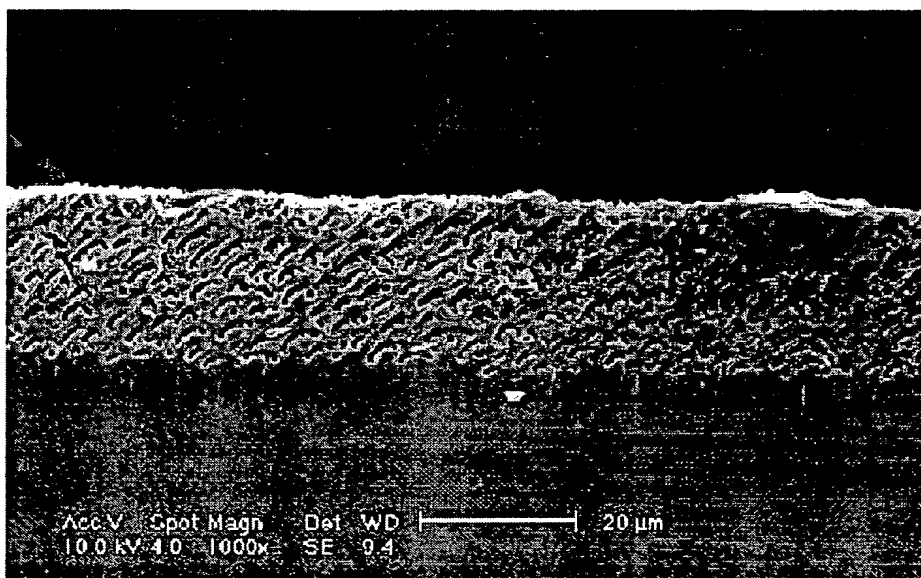


Fig. 5

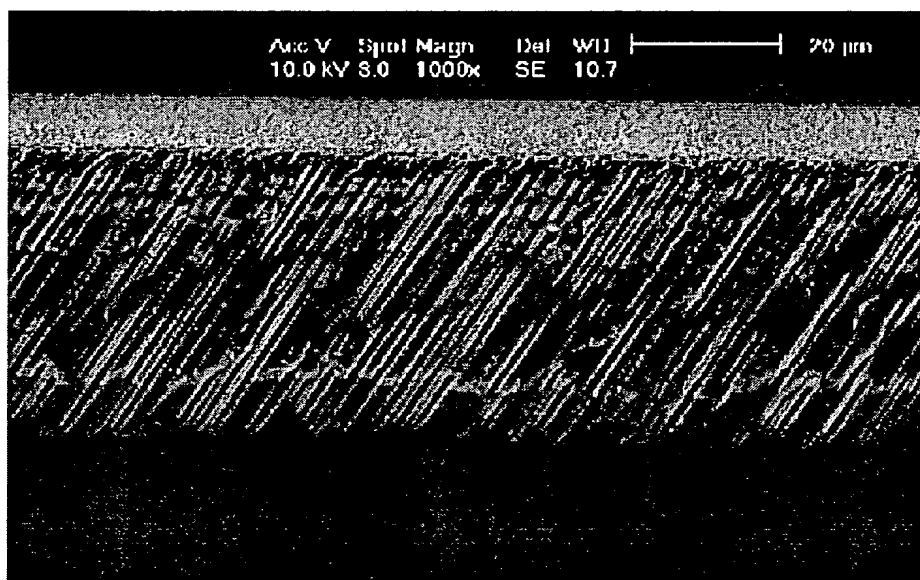
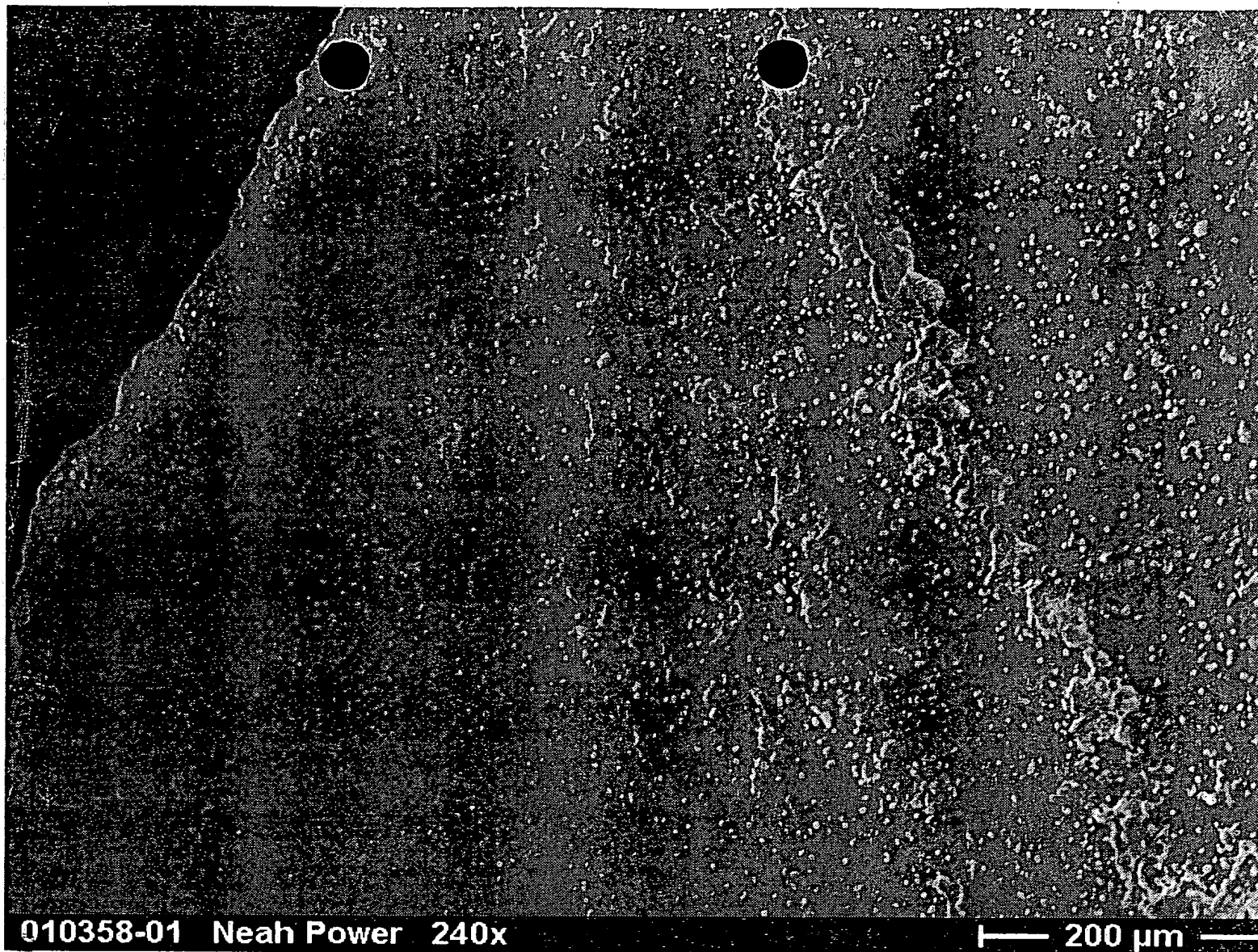
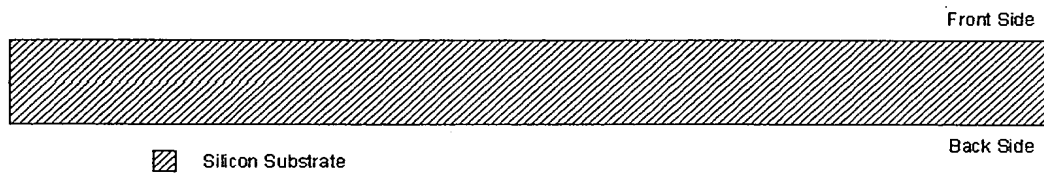


Fig. 6

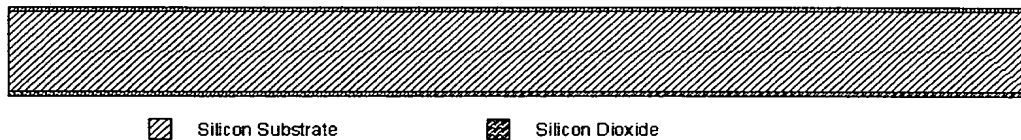


01

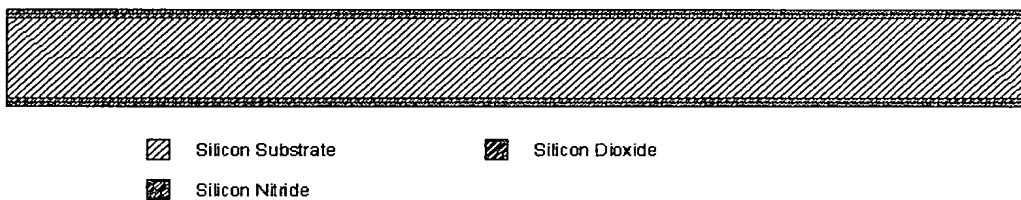
*Fig. 7*



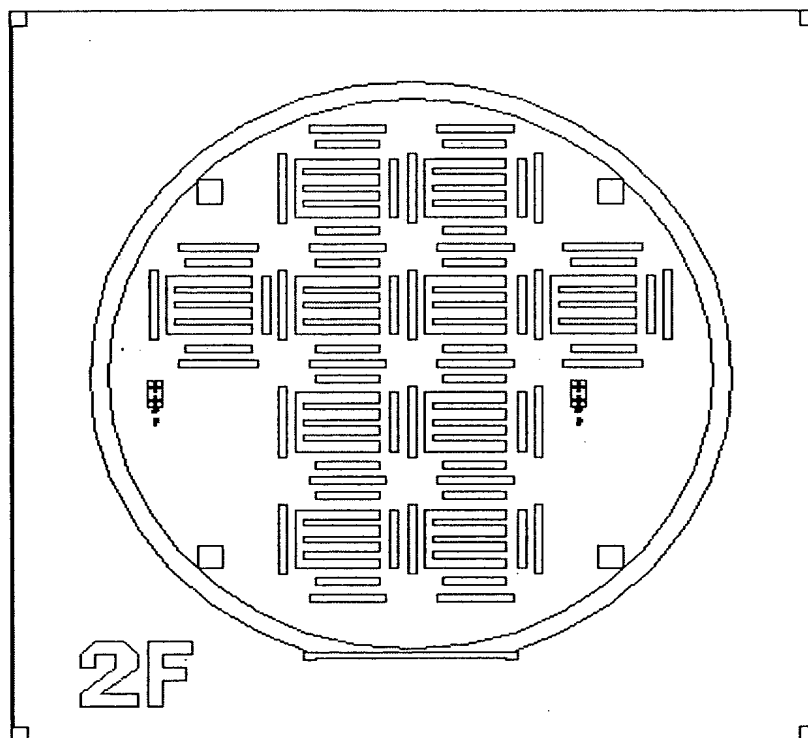
*Figure 8*



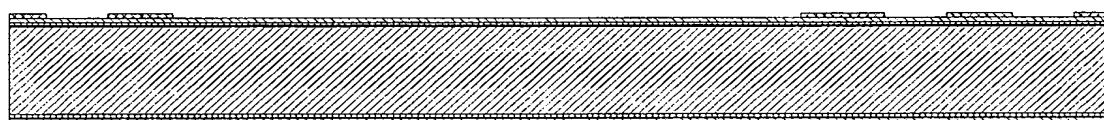
*Figure 9*




*Figure 10*

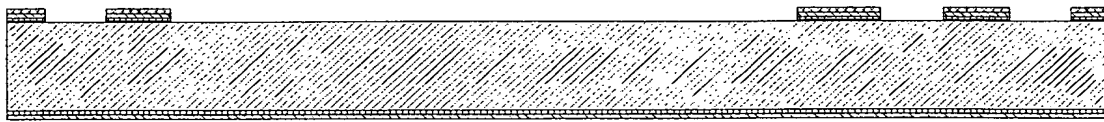




*Figure 11A*





- |   |   |
|---|---|
|  Silicon Substrate |  Photoresist     |
|  Silicon Nitride   |  Silicon Dioxide |

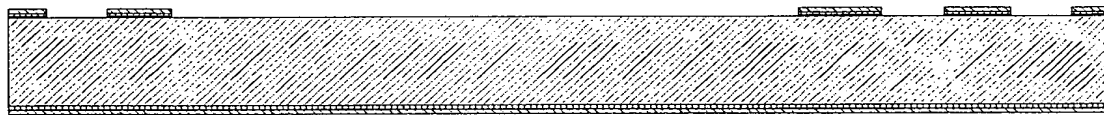
*Figure 11B*





 Silicon Substrate  
 Silicon Nitride

 Photoresist  
 Silicon Dioxide

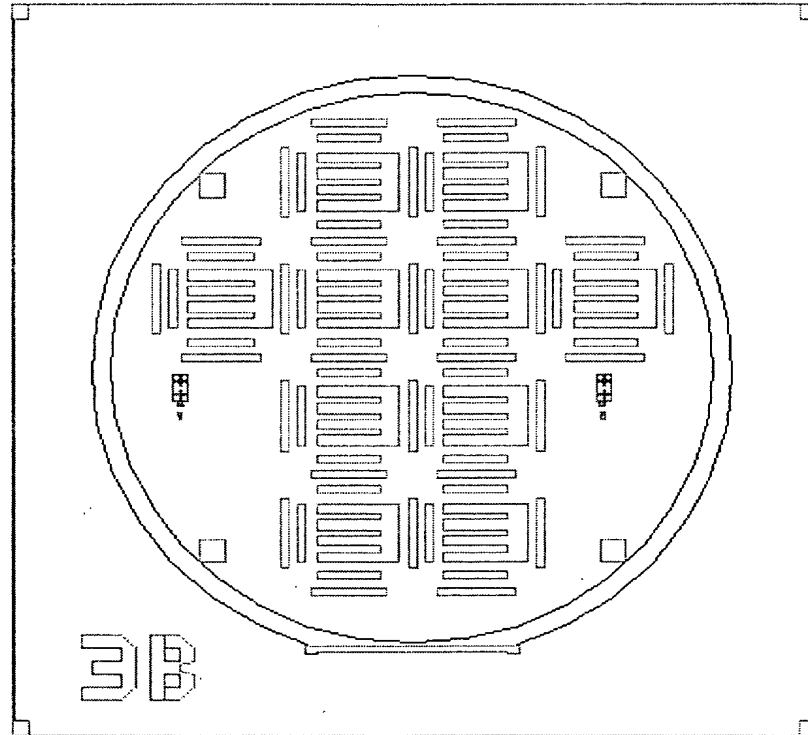
***Figure 12***



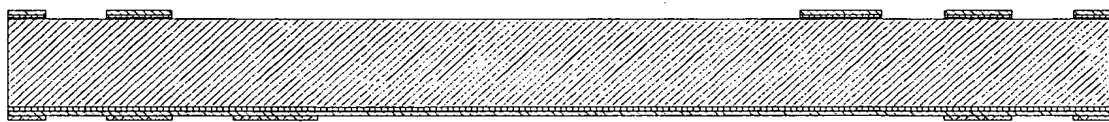
 Silicon Substrate  
 Silicon Nitride

 Silicon Dioxide

***Figure 13***



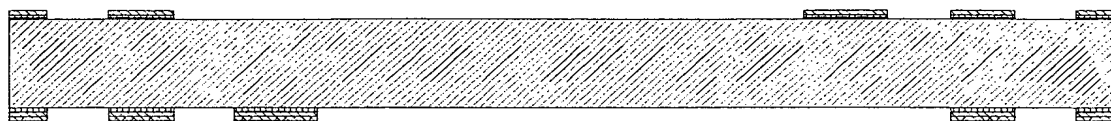
**Figure 14A**



- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Photoresist     |

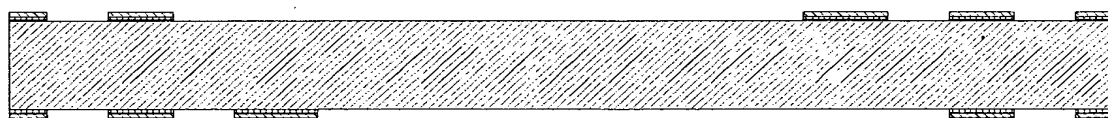
**Figure 14B**





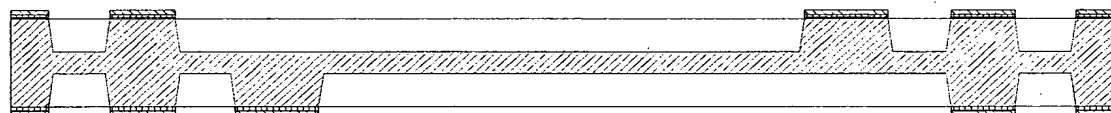
- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Photoresist     |

**Figure 15**



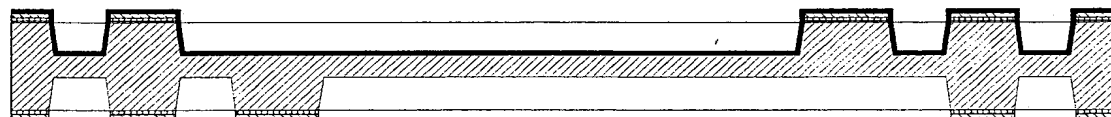
- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |   |

**Figure 16**



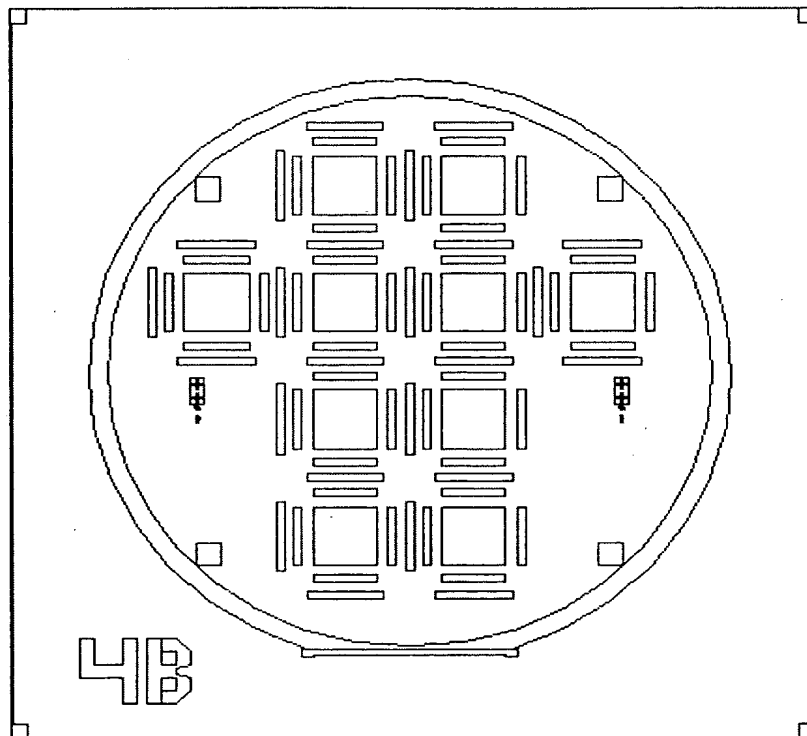
- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Flow Channel    |

**Figure 17**

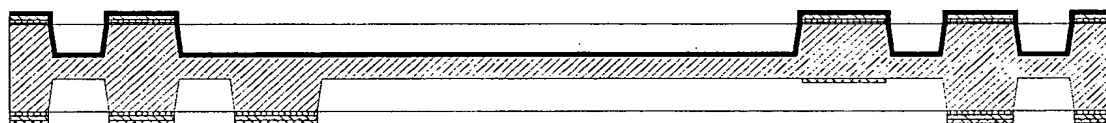


- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Flow Channel    |
|  Ti-W:Ag           |   |

**Figure 18**

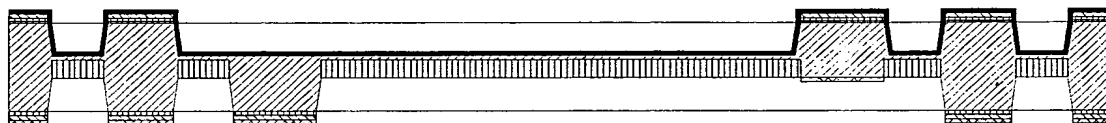





*Figure 19A*



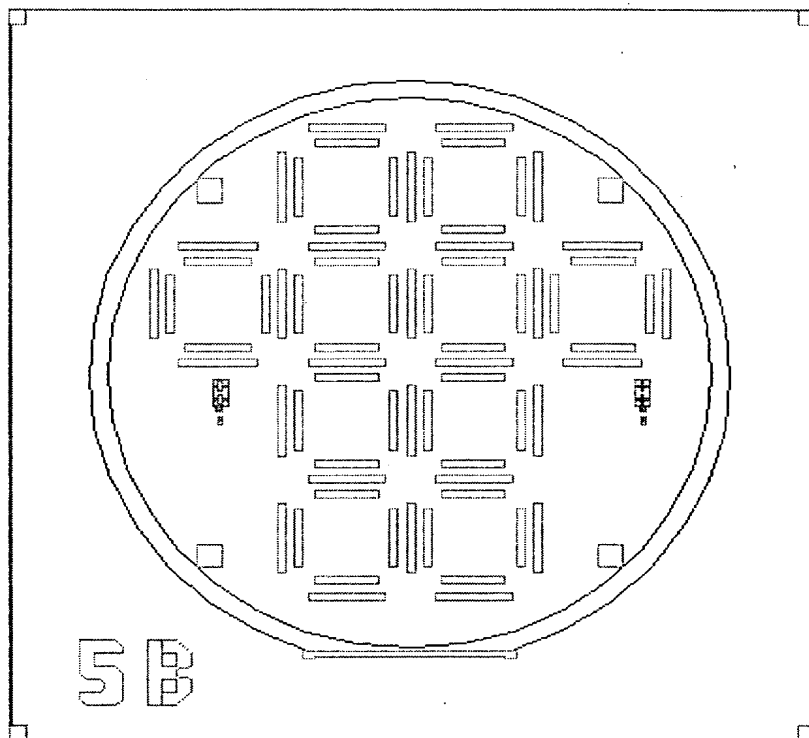
- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Flow Channel    |
|  Ti-W:Au           |  Photoresist     |

*Figure 19B*

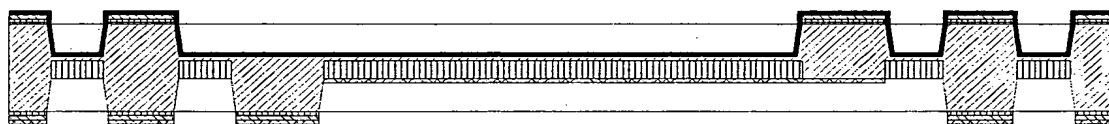


- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Flow Channel    |
|  Ti-W:Au           |  Photoresist     |
|  Ti-W:Au           |   |

*Figure 20*

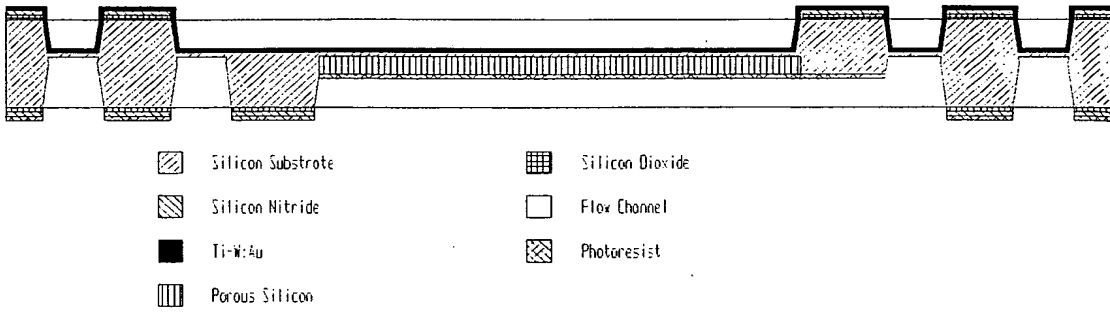


**Figure 21A**

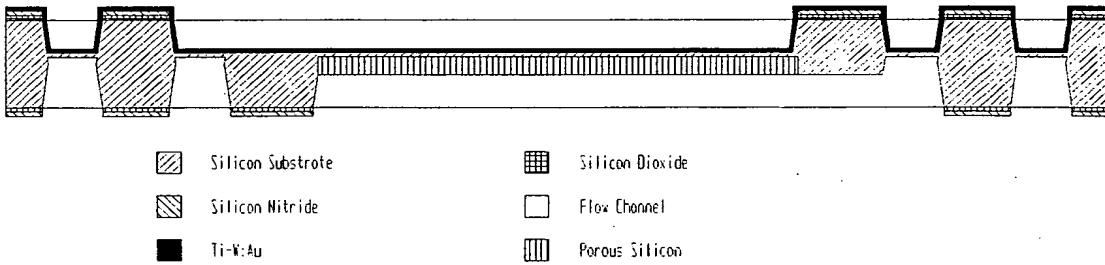


- |   |   |
|---|---|
|  Silicon Substrate |  Silicon Dioxide |
|  Silicon Nitride   |  Flow Channel    |
|  Ti-W: Au          |  Photoresist     |
|  Ti-W: Au          |   |

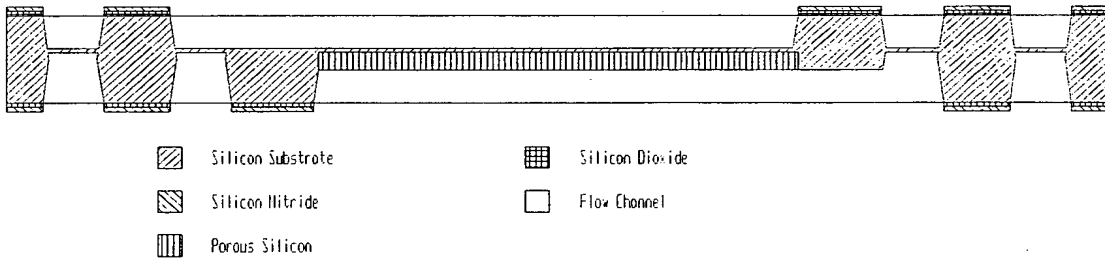
**Figure 21B**



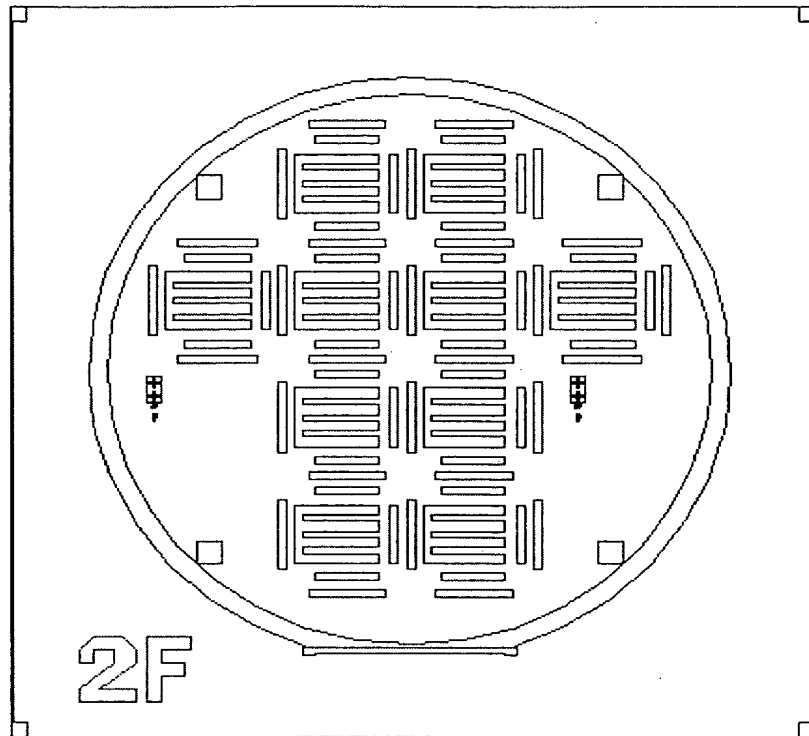
*Figure 22*



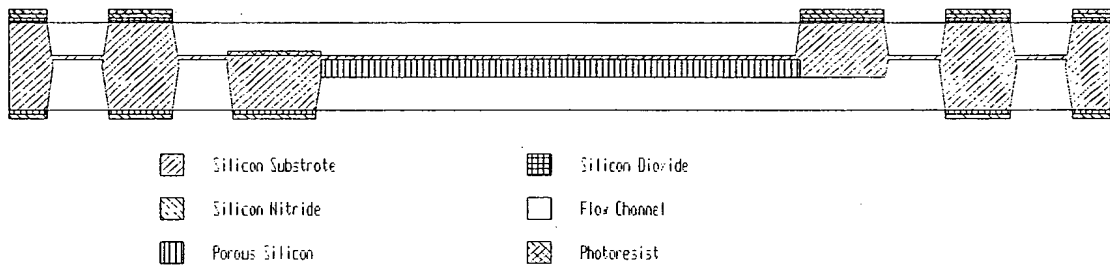
*Figure 23*



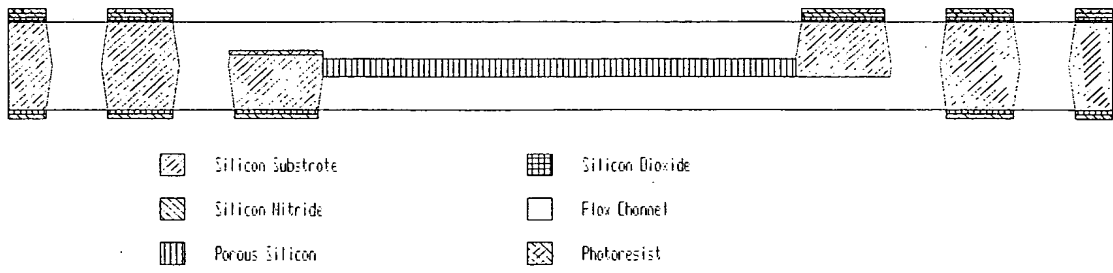
*Figure 24*



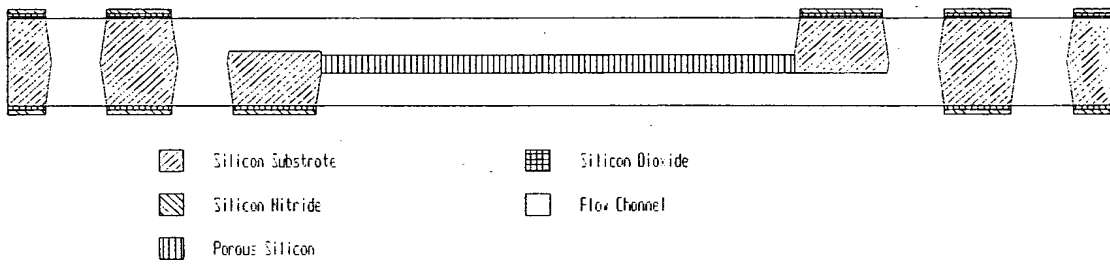
*Figure 25A*



*Figure 25B*

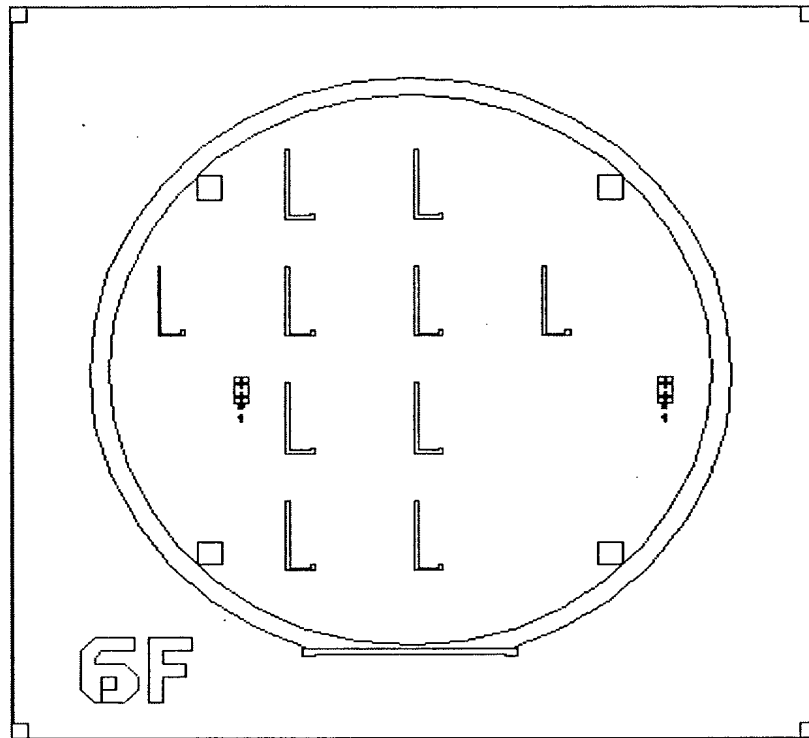


**Figure 26**

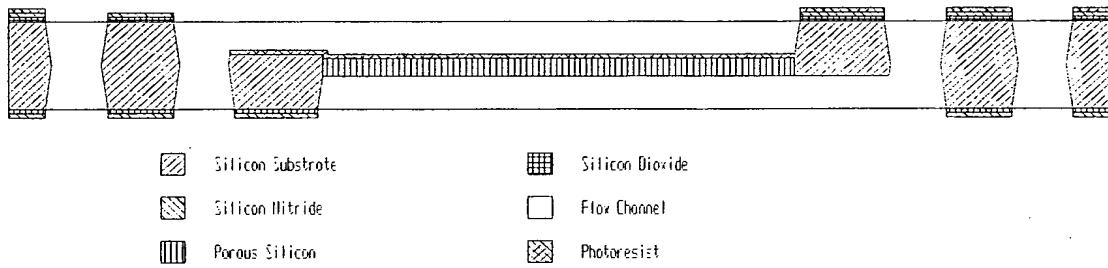


**Figure 27**

09829786 04400  
"58262860"



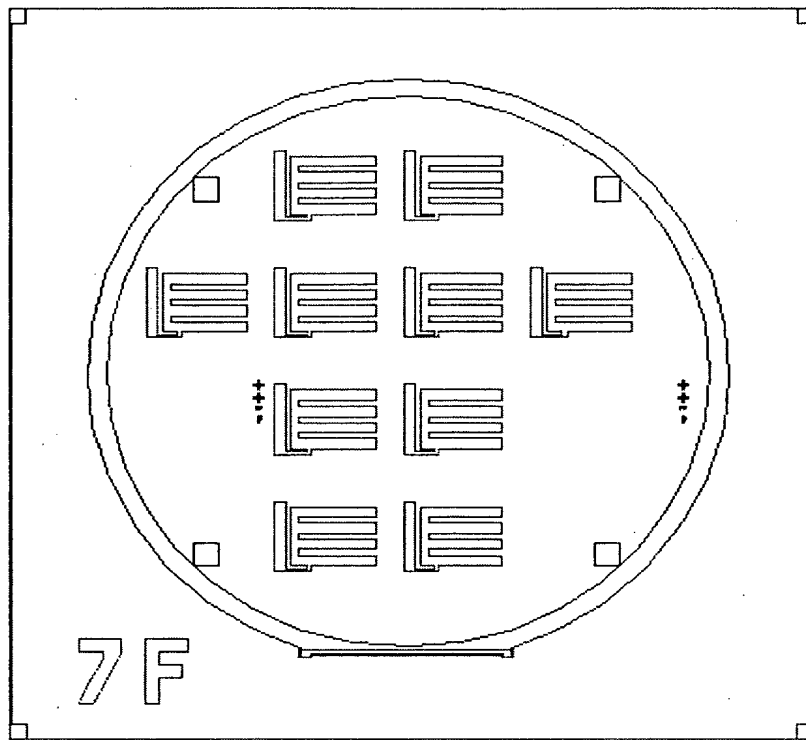
*Figure 28A*



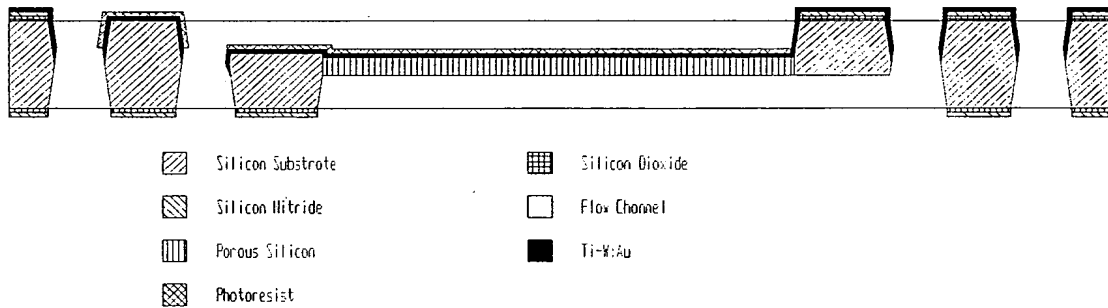
*Figure 28B*



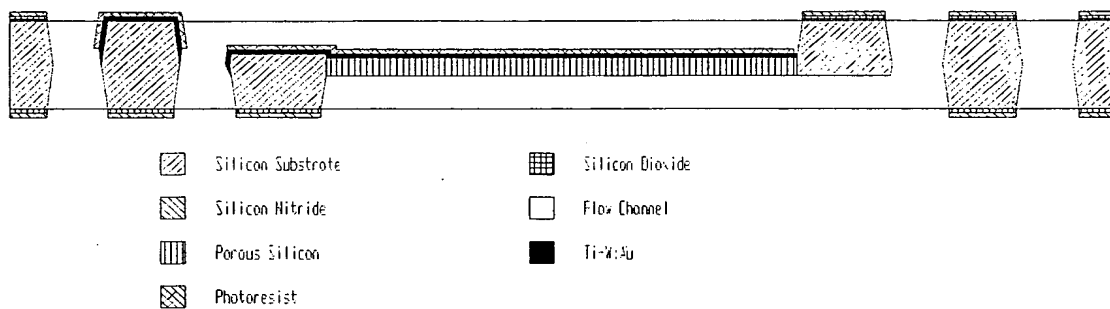




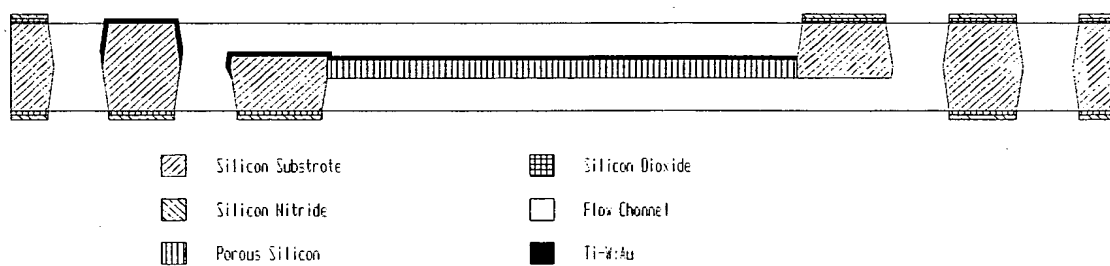
**Figure 32A**



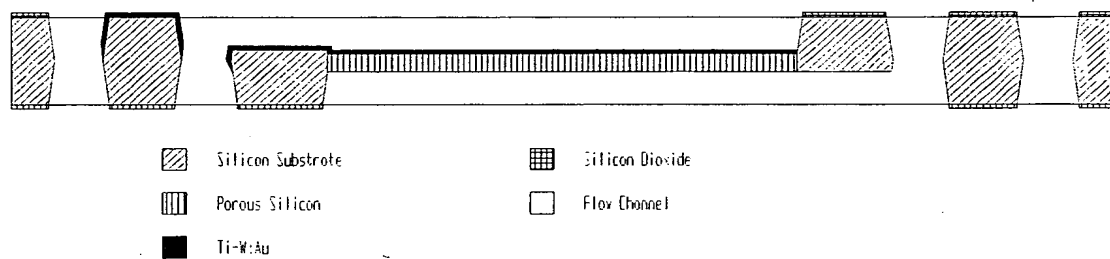
**Figure 32B**



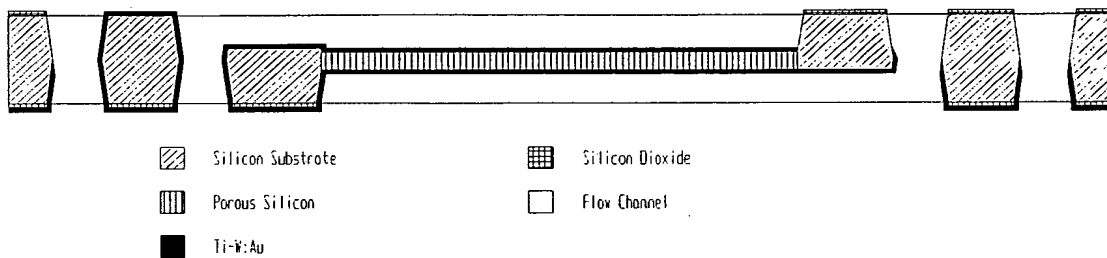
*Figure 33*



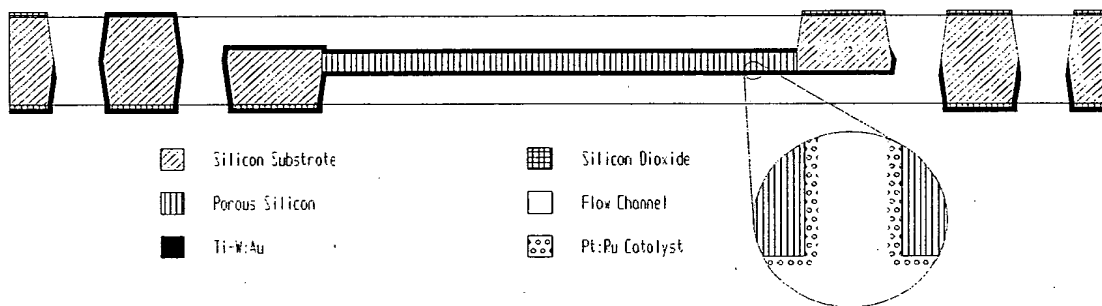
*Figure 34*



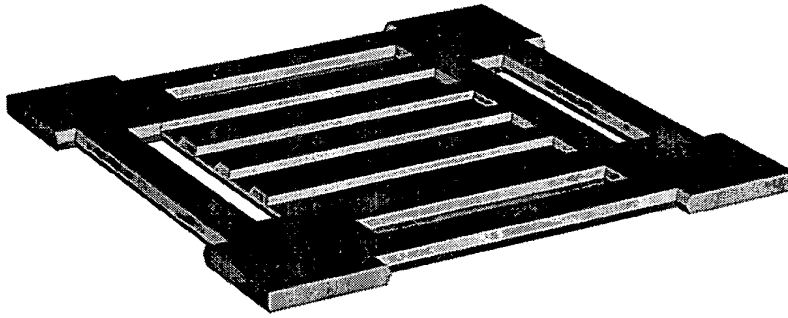
*Figure 35*



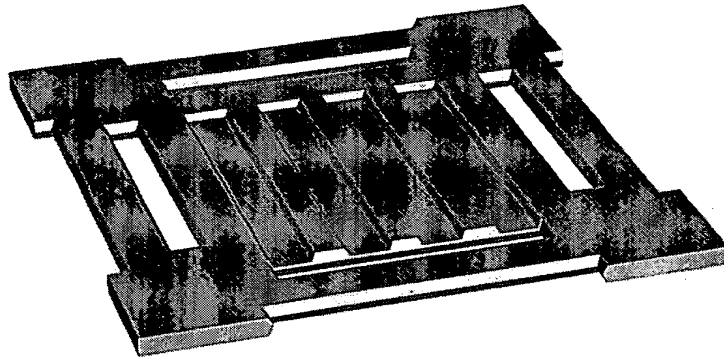
**Figure 36**



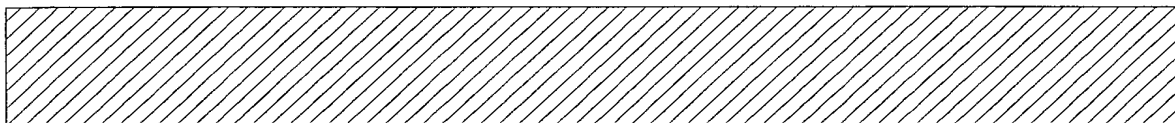
**Figure 37**




*Figure 38A*

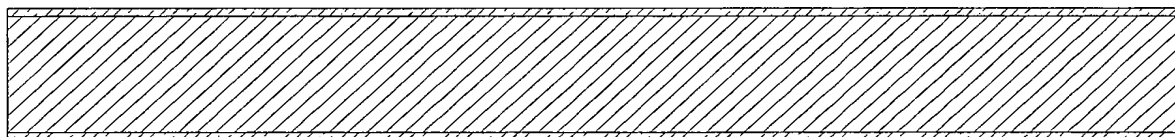



*Figure 38B*



 Silicon Substrate

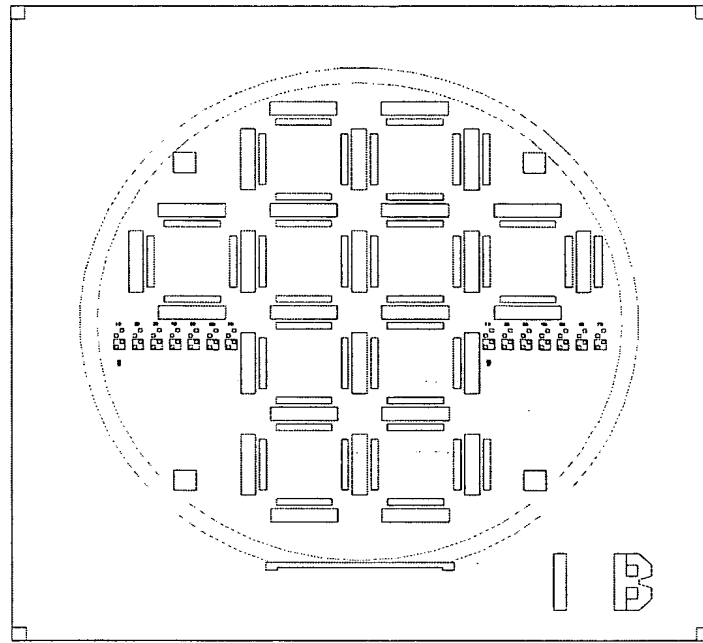
***Figure 39***



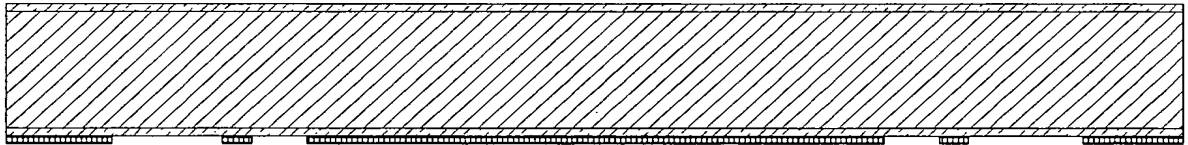
 Silicon Substrate




 Silicon Nitride

***Figure 40***

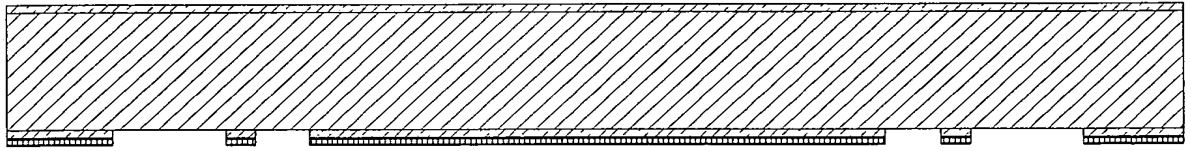



***Figure 41A***




-  Silicon Substrate
-  Silicon Nitride
-  Photo Resists

***Figure 41B***

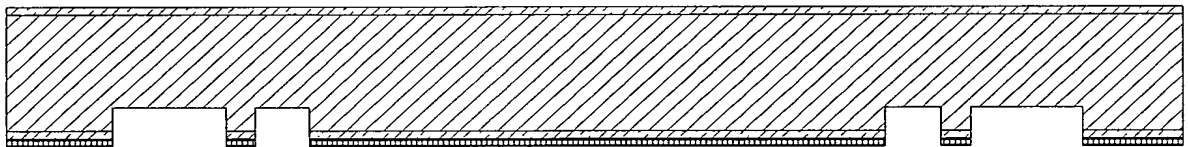



 Silicon Substrate


 Silicon Nitride


 Photo Resists

***Figure 42***

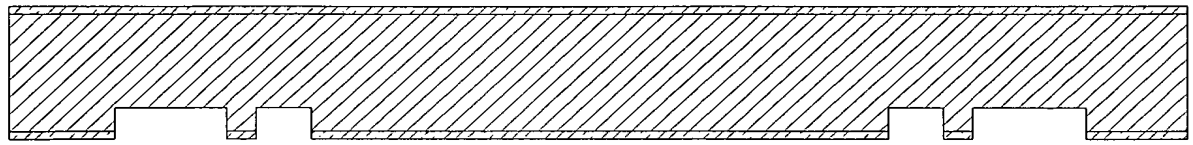



 Silicon Substrate

 Silicon Nitride

 Photo Resists


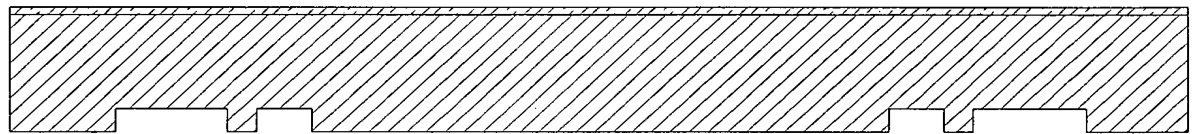
***Figure 43***




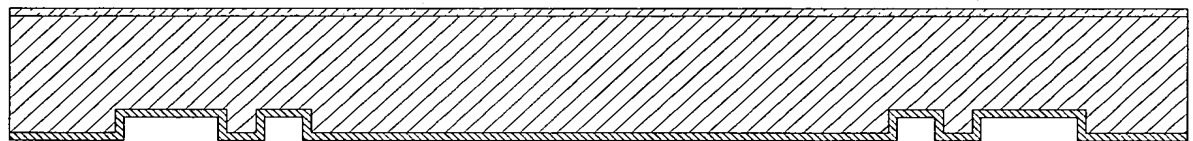
 Silicon Substrate

 Silicon Nitride


**Figure 44**

 Silicon Substrate Silicon Nitride

**Figure 45**

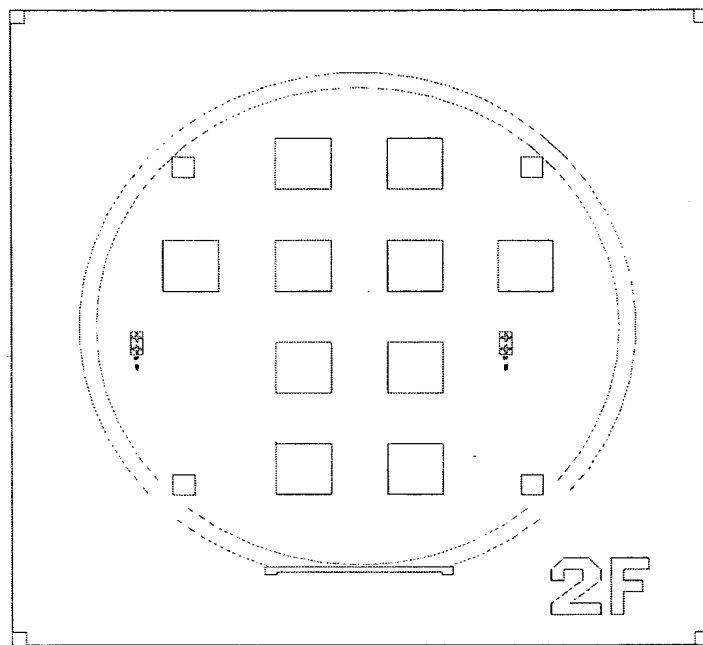
 Silicon Substrate

 Silicon Nitride

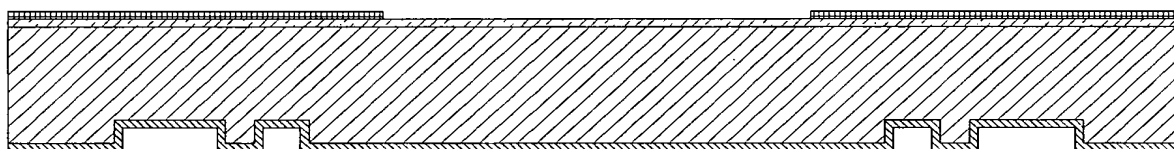
 Aluminum Contact





**Figure 46**



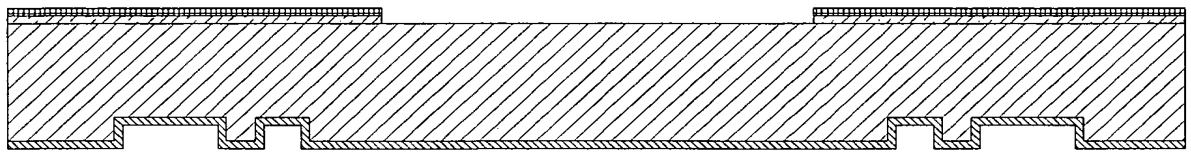






**Figure 47A**



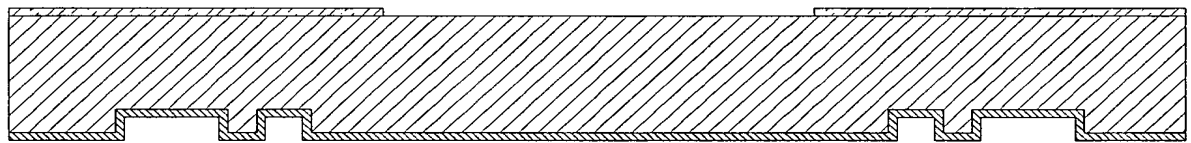
- |   |                   |   |               |
|---|-------------------|---|---------------|
|  | Silicon Substrate |  | Photo Resists |
|  | Silicon Nitride   |   |               |
|  | Aluminum Contact  |   |               |




**Figure 47B**



-  Silicon Substrate
-  Photo Resists
-  Silicon Nitride
-  Aluminum Contact

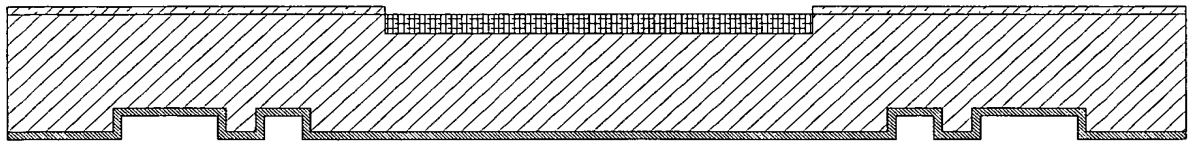
***Figure 48***







-  Silicon Substrate
-  Silicon Nitride
-  Aluminum Contact

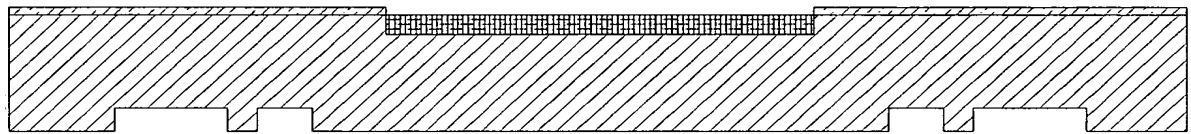
***Figure 49***




TOP SECRET 98060300



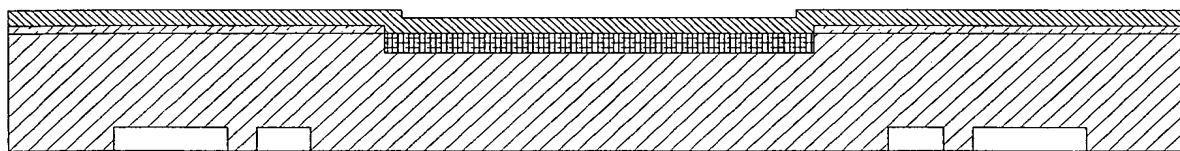
- |   |                   |   |                |
|---|-------------------|---|----------------|
|  | Silicon Substrate |  | Porous Silicon |
|  | Silicon Nitride   |   |                |
|  | Aluminum Contact  |   |                |


***Figure 50***



- |   |                   |   |                |
|---|-------------------|---|----------------|
|  | Silicon Substrate |  | Porous Silicon |
|  | Silicon Nitride   |   |                |

***Figure 51***



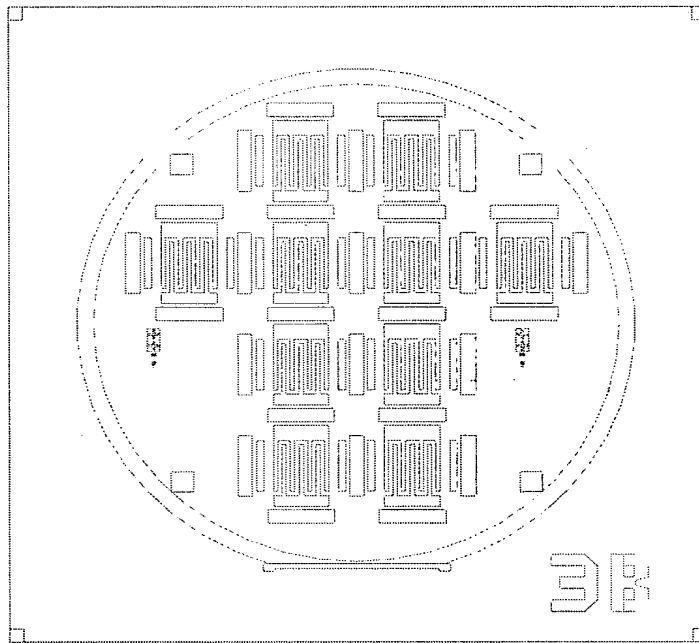
 Silicon Substrate

 Aluminum Contact

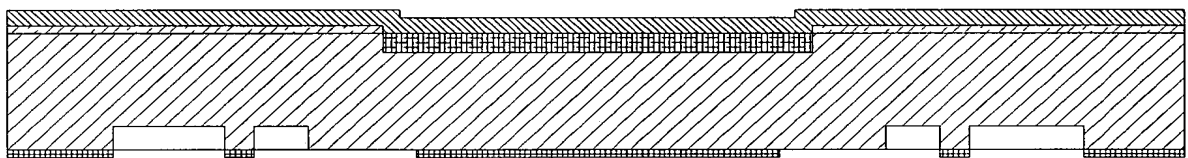
 Silicon Nitride






 Porous Silicon

***Figure 52***

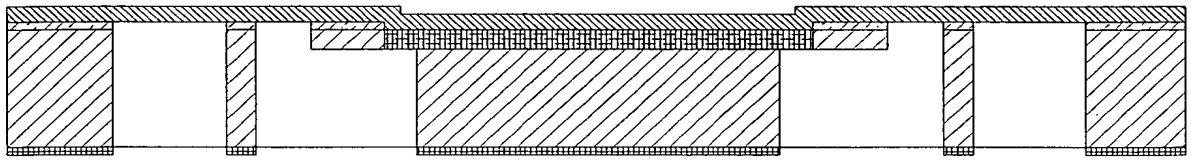






**Figure 53A**



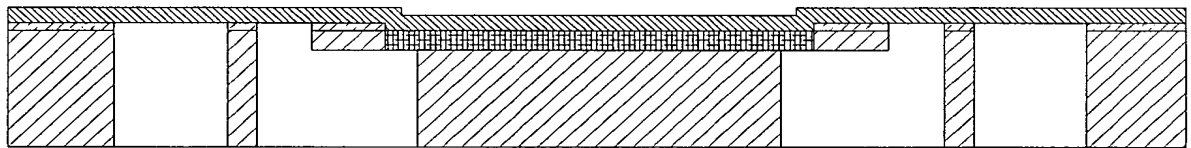
- |   |  |
|---|--|
|  Silicon Substrate |  Aluminum Contact |
|  Silicon Nitride   |  Porous Silicon   |
|  Photo Resists     |  |





**Figure 53B**



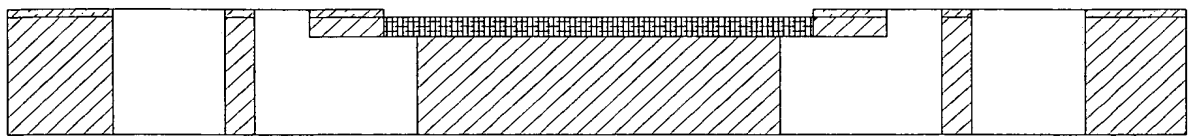
- |   |  |
|---|--|
|  Silicon Substrate |  Aluminum Contact |
|  Silicon Nitride   |  Porous Silicon   |
|  Photo Resists     |  |

***Figure 54***



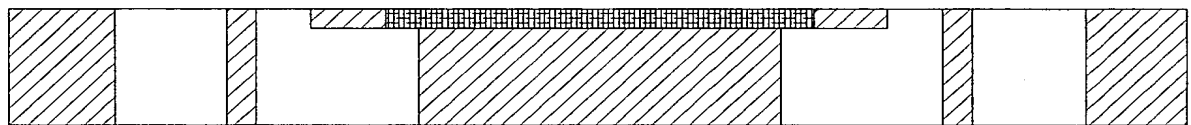
- |   |  |
|---|--|
|  Silicon Substrate |  Aluminum Contact |
|  Silicon Nitride   |  Porous Silicon   |



***Figure 55***



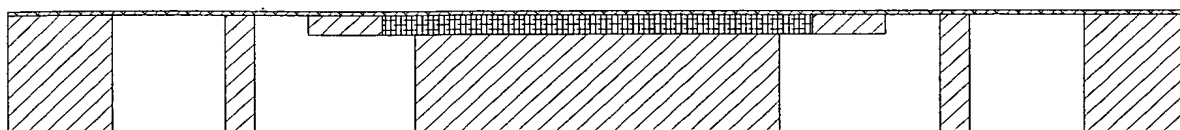
 Silicon Substrate       Porous Silicon  
 Silicon Nitride




***Figure 56***



 Silicon Substrate  
 Porous Silicon

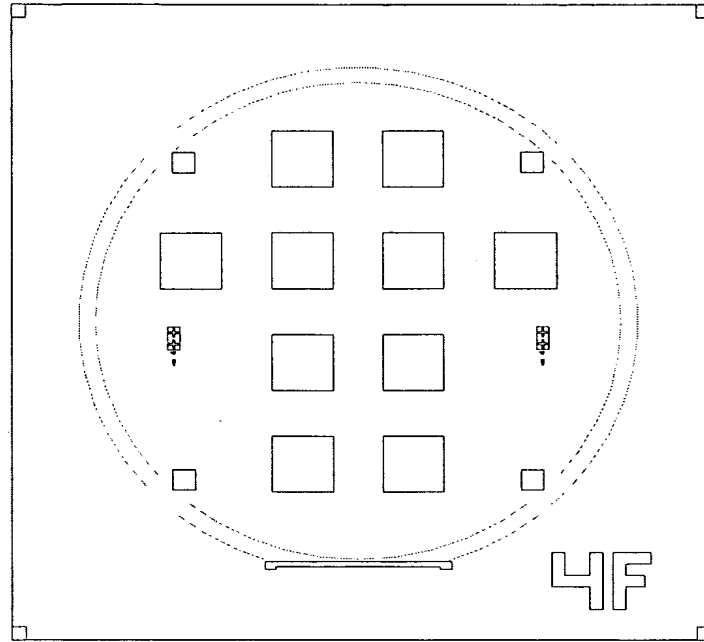
***Figure 57***



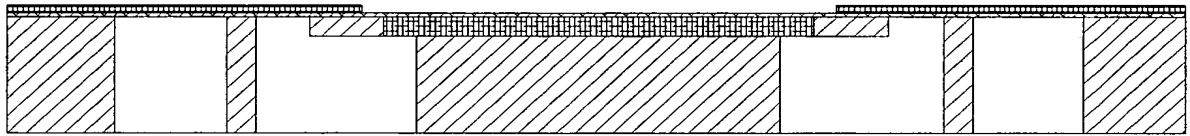
 Silicon Substrate
  Porous Silicon  
 Metal Seed Layer





***Figure 58***



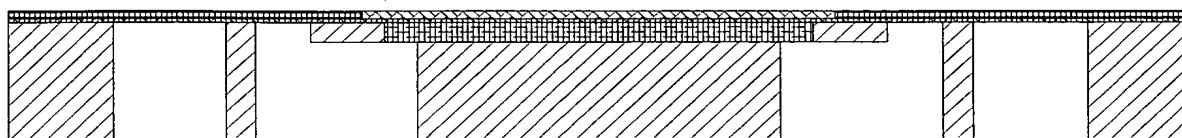






**Figure 59A**



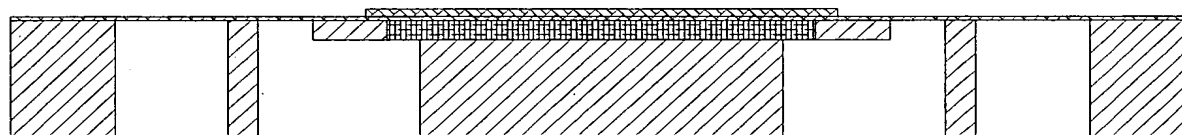
- |   |  |
|---|--|
|  Silicon Substrate |  Photo Resists  |
|  Metal Seed Layer  |  Porous Silicon |



**Figure 59B**



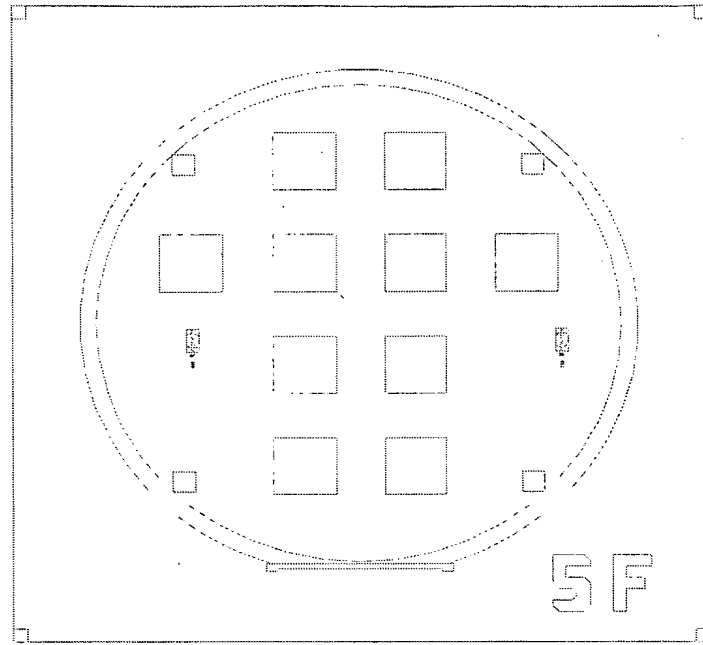
- |   |  |
|---|--|
|  Silicon Substrate |  Photo Resists  |
|  Pd Layer          |  Porous Silicon |

***Figure 60***

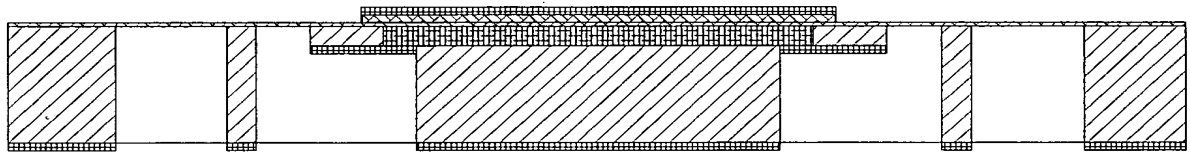






- |   |  |
|---|--|
|  Silicon Substrate |  Porous Silicon |
|  Pd Layer          |  |

***Figure 61***

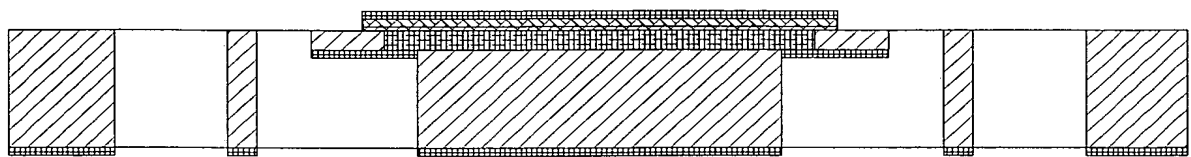



**Figure 62A**




- |   |                   |   |                |
|---|-------------------|---|----------------|
|  | Silicon Substrate |  | Porous Silicon |
|  | Pd Layer          |  | Photo Resists  |


**Figure 62B**



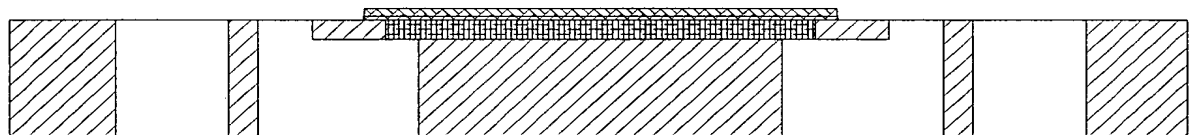
 Silicon Substrate


 Porous Silicon

 Pd Layer


 Photo Resists

***Figure 63***



 Silicon Substrate

 Porous Silicon

 Pd Layer

***Figure 64***

0939786 04191  
FIG. 6A

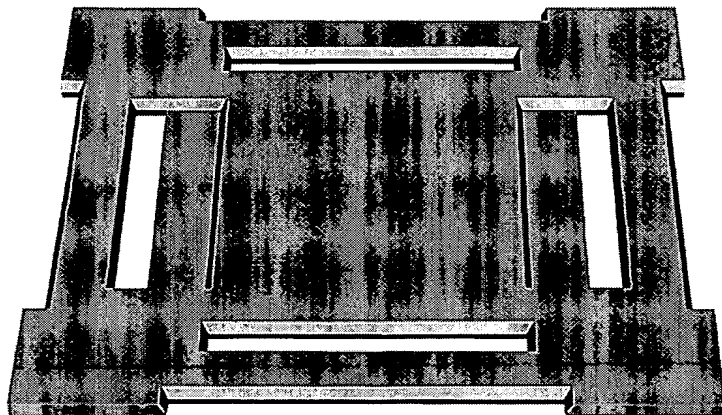


Fig. 6SA

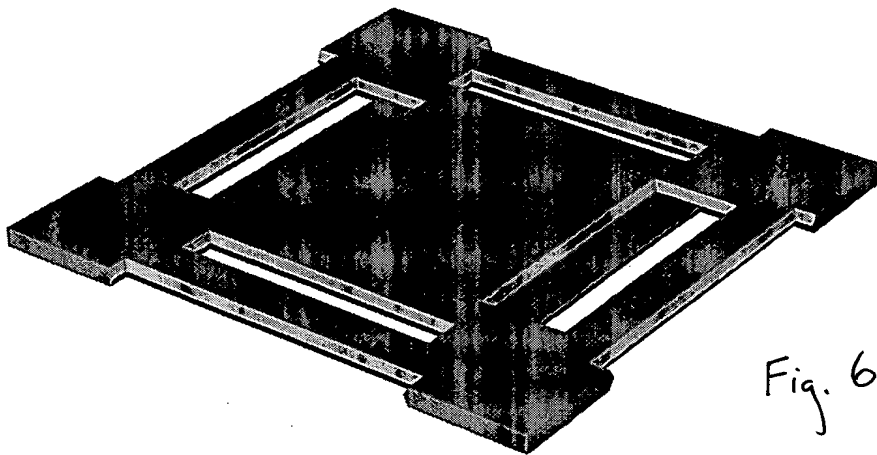


Fig. 6SB

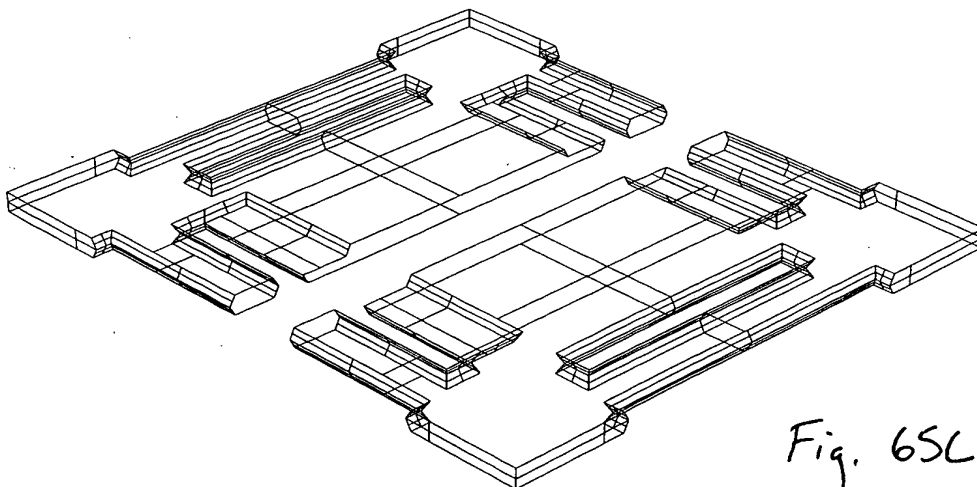


Fig. 6SC